

**NONPROVISIONAL PATENT
APPLICATION TRANSMITTAL RULE §1.53(b)
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

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Sir:

Transmitted herewith for filing under 37 C.F.R. §1.53(b) is a nonprovisional patent application:

For (Title): PRESENTING PROGRAMS

By (Inventors): Peter Ernest HOOKHAM-MILLER

- ☒ 43 pages of Specification/Claims 1-88/Abstract are attached.
- ☒ Formal drawings (Figs. 1-4; 3 sheets is attached.
- ☒ A Declaration and Power of Attorney is attached.
- ☒ A Statement to establish small entity status under 37 C.F.R. §§1.9 and 1.27 is attached.
- ☒ Priority of foreign applications Nos. 0005018.7 and 0014320.6 filed March 1, 2000 and June 12, 2000, respectively, in Great Britain is claimed under 35 U.S.C. §119.
- ☒ A certified copy of the above corresponding foreign applications are attached.

The filing fee is calculated below and includes claim status after entry of any Preliminary Amendment noted above:

FOR:	NO. FILED	NO. EXTRA
BASIC FEE		
TOTAL CLAIMS	88 - 20	= 68
INDEP CLAIMS	7 - 3	= 4
<input type="checkbox"/> MULTIPLE DEPENDENT CLAIMS		

SMALL ENTITY

RATE	FEE
	\$ 355
x 9 =	\$ 612
x 40 =	\$ 160
+135 =	\$
TOTAL	\$ 1127

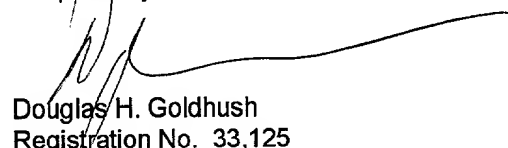
OR
OR
OR
OR
OR
OR

LARGE ENTITY

RATE	FEE
	\$ 710
x 18	\$
x 80	\$
+270	\$
TOTAL	\$

- ☐ A check for the filing fee is not enclosed at this time.
- ☒ Check No. 303407 in the amount of \$1,127.00 is attached. Please charge any fee deficiency or credit any overpayment to Deposit Account No. 01-2300. However, this application is entitled to small entity status. DO NOT charge large entity fees to our Deposit Account.

Respectfully submitted,


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SMALL ENTITY DECLARATION

APPLICANT OR PATENTEE Peter Ernest Hookham-Miller
 SERIAL NO. _____ ☐ PATENT NO. _____ ATTORNEY'S DOCKET NO. _____

☐ 1. FILED OR ISSUED _____

☐ 2. SUBMITTED HEREWITH a patent application
 FOR his invention "presenting programs"

(Insert Title)

I (we) hereby declare that I (we) am (are) entitled to the benefit of small entity status with respect to the above-identified application or patent for purposes of paying reduced fees under 35 U.S.C. § 41(a) and (b) to the U.S. Patent and Trademark Office.

- ☒ A. INDEPENDENT INVENTOR
 I (we) qualify as (an) independent inventor(s) as defined in 37 C.F.R. § 1.9(c).
- ☐ B. INDIVIDUAL NON-INVENTOR
 I (we) would qualify as (an) independent inventor(s) as defined in 37 C.F.R. § 1.9(c) if I (we) had made the invention.
- ☐ C. SMALL BUSINESS CONCERN
 I am ☐ THE OWNER ☐ AN OFFICIAL of the small business concern identified below and am empowered to act on behalf of the concern. The concern qualifies under 37 C.F.R. § 1.9(d) and 13 C.F.R. § 121.3-18. Rights under contract or law have been conveyed to and remain with the concern and are exclusive unless a checkmark is placed here ☐. All other rights belong to small entities as defined in 37 C.F.R. § 1.9.
- ☐ D. NON-PROFIT ORGANIZATION
 I am an official empowered to act on behalf of the non-profit organization identified below. The organization qualifies under 37 C.F.R. § 1.9(e), subsection: ☐ (1) ☐ (2) ☐ (3) ☐ (4). Rights under contract or law have been conveyed to and remain with the organization and are exclusive unless a checkmark is placed here ☐. All other rights belong to small entities as defined in 37 C.F.R. § 1.9.

I (we) acknowledge the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate [37 C.F.R. § 1.28(b)].

I (we) declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct.

A. INDEPENDENT INVENTOR(S)	B. INDIVIDUAL NON-INVENTOR(S)	
<u>Peter Ernest Hookham-Miller</u>	<u>[Signature]</u>	<u>18.10.00</u>
Name	Signature	Date
_____	_____	_____
Name	Signature	Date
_____	_____	_____
Name	Signature	Date
_____	_____	_____

C. BUSINESS CONCERN D. NON-PROFIT ORGANIZATION

Name of Concern or Organization Address

By _____

Name of Person Signing Signature

Title Date

PRESENTING PROGRAMS

Field of the Invention

5 The present invention relates to presentation of programmes, and in particular, but not exclusively, to provision of further content and/or interactivity for users of program presentation terminals by means of a data communication system.

10

Background of the Invention

Broadcasting systems for transmitting programs, such as TV or radio programmes, to be represented by a receiver apparatus to
15 the users ("audience") thereof are known. For example, the skilled person is aware of the basic principle and operation of a television program broadcasting system and the concept of displaying television programmes to the viewers of television sets, and therefore the operation thereof will not be
20 explained in detail. It is sufficient to note that the broadcasting systems include systems that are based on wireless program signal transmission, satellite transmission and cable transmission and so on and that the program signal transmission may comprise transmission of analogue or digital
25 signals and/or a combination of these.

The programmes may be transmitted as live transmissions or as recorded programmes. The live transmissions show an event, such as a football game, news or a lottery draw, substantially
30 in real-time for the viewers. The recorded programmes have been prepared beforehand and will be transmitted and shown later on to the viewers at an appropriate time. Recorded programs may also be represented from a storage media, such as

video or audio tape, compact disk (CD) or digital video disk (DVD) e.g. by means of a video player, video disk or CD player or a tape player. The recording may contain a program that has been broadcast earlier or a recording that has been prepared
5 to be distributed e.g. through video shops or record stores.

The programmes can also be divided in several categories, such as news, sport, game shows, entertainment programs, comedies, drama series, movies, children programmes, educational
10 programmes, documentaries, and so on. For example, the purpose of the educational programmes is to help the viewers thereof to learn new things and to develop their knowledge and/or skills. The educational programmes may be viewed by various groups of people, such as small children or schoolchildren,
15 students, adults, or anybody else wishing to learn new things. The game shows may include, for example, entertainment games with no prizes or only modest prizes and gambling, such as lottery or betting.

20 Programmes, such as documentaries, educational programmes and/or game shows, may include various stimulating features or events, such as questions to be answered or special tasks to be performed by the viewers or listeners or other events to which the remote audience may wish to give feedback or from
25 which the viewers may wish to receive more information. Individuals watching dramas or comedies might wish to have influence over the story and/or the end of the story. People watching documentaries may wish to receive some further information of the facts and/or background and so on.

30

It is believed that interactivity may make the programmes in general more interesting and/or increase the efficiency of the educational programmes. For example, the viewer of a TV

program may wish to have the possibility to respond to questions, events or other stimulating features of the programmes they are currently viewing. The conventional one-way broadcasting systems, however, may not be able to provide
5 feasible, easy-to-use and affordable interactivity to as the remote audience might wish to have.

The viewer (or listener) may also wish to receive further content that associates with the program he is viewing. The
10 content could be any associating information such as further information of the events or characters of the program, background information, information of the rules of a game that is to be presented and so on. The further content could also comprise views from another angle(s), replay of certain
15 events, additional views or parts of the program not presented by the broadcasting system and so on.

The previous proposals have suggested use of public switched telecommunication networks (PSTN) or other conventional
20 telephone networks for interaction with the program. In accordance with the earlier proposals the viewer or listener needs to have a telephone in order to make a telephone call to the television studio. The viewer may also contact the studio through a personal computer (PC) connected to the Internet to
25 give his answer or give some other feedback or to fetch further information. The broadcasting systems in general may not have been enabled to provide any tailored communication towards selected users other than by a telephone (or Internet) call between the viewer and e.g. the presenter of the program
30 through the public telephone network. Some viewers may find it inconvenient to make a call to a particular number provided by the program. Although the Internet may be used for the communication, not everyone has a home PC that is connected to

the Internet. A percentage of people may also find the PCs and Internet subscriptions too expensive and/or difficult to install and/or use and/or operate.

5 The previous proposals may thus not have been able to deliver a cost-effective solution for interaction with the broadcasting system, such as for interactive learning or for game shows or for fetching further content that associates with the program. This has been held back by lack of solutions
10 offering an affordable and workable solution for providing a communication channel towards the broadcasting system or any other source of further content. The present proposals may not be able to provide personalised interactivity and/or further content to individual users in a satisfactory manner.

15 The users may also wish to have mobility while viewing or listening to the program. The mobility may be restricted by a wired connection between a terminal that may be used for the interactive communication and the telecommunication system.
20 Furthermore, the present arrangements may also provide only limited possibilities for providing interactivity and/or further content in association with recorded programs.

Summary of the Invention

25 The embodiments of the present invention aim to address one or several of the above problems. Furthermore, the embodiments aim to provide tailored interactivity and/or further content to the users of a conventional program representation system
30 by means of a user device that may communicate via a different communication media than what is used for the provision of the programs.

According to one aspect of the present invention there is provided a method for presenting a program for a user. In the method information that associates with the user is stored in a remote management unit, preferably to a database thereof. A
5 program representation device is provided with a program signal by means of a program signal broadcasting system, whereafter the program is presented to the user based on the program signal. A predefined event is monitored for, and upon detection thereof, data is transported between the remote
10 management unit and a user device operable by the user while experiencing the program. The transportation occurs over a packet data network and a wireless data communication link between the packet data network and the user device. The data that associates with the program is personalised based on said
15 stored information.

According to another aspect of the present invention there is provided a method for presenting a program for a user. In the method information that associates with the user is stored in
20 a remote management unit. A program signal is generated by means of replaying apparatus and subsequently provided to a program representation device. The program is then represented to the user based on the program signal. A predefined event is monitored for and in response to detection of the predefined
25 event, data is transported between the remote management unit and a user device operable by the user while experiencing the program. The data transportation occurs over a packet data network and a wireless data communication link between the packet data network and the user device. The data associated
30 with the program is personalised based on said stored information.

According to another aspect of the present invention there is provided a method for providing interactivity for a viewer of a television program that has been provided by a television system. The television program is displayed to the viewer
5 based on a signal from the television system. The method comprises further a step of generation of a packet data message that is to be transmitted between a remote management unit and a handheld controller operable by the viewer while viewing the program. The management unit is connected to a
10 packet switched data communication system and comprises processor means for processing and storage means for storing information that associates with the viewer. The management unit also stores information that associates with the program. The handheld controller is associated with a wireless module
15 enabling a wireless data communication link between the controller and the packet switched communication network. In accordance with a further method step the packet data message is transmitted between the wireless module and the packet switched telecommunication system via the wireless data
20 communication link, the packet data message and the signal from the television system being transported are separate communication systems.

According to another aspect of the present invention there is
25 provided a system for presenting a program. The system comprises a program representation terminal for representing the program to a user and a broadcasting system for providing the program to the program representation terminal. A packet data communication network is also provided. A remote
30 management unit is connected to the packet data communication network, said remote management unit comprising a processor for processing data that associates with the program and a storage unit for storing information that associates with the

user. Said processor is adapted to personalise data that associates with the program based on the information that associates with the user. The system comprises further a user device operable by the user while experiencing the program.

- 5 The user device is adapted for communication over the packet data network by means of a wireless data communication link between the data communication network and the user device and to present information to the user based on data that is received via the wireless data communication link from the
- 10 remote management unit while the user is experiencing the program.

- According to still another aspect of the present invention there is provided a system for presenting a program. The
- 15 system comprises a program representation terminal for representing the program to a user and program replaying apparatus for providing the program to the program representation terminal. A packet data communication network is also provided. A remote management unit is connected to the
- 20 packet data communication network, said remote management unit comprising a processor for processing data that associates with the program and a storage unit for storing information that associates with the user. Said processor is adapted to personalise data that associates with the program based on the
- 25 information that associates with the user. A user device that is operable by the user while experiencing the program is also provided. The user device is adapted for communication over the packet data network by means of a wireless data communication link between the data communication network and
- 30 the user device and to present information to the user based on data that is received via the wireless data communication link from the remote management unit while the user is experiencing the program.

According to yet another aspect of the present invention there is provided a system for presenting television programs. The system comprises a television terminal for displaying the television program based on a program signal and a program signal provision system adapted to provide the television terminal with the program signal. A packet data communication system is provided for data communication. A management unit is connected to the packet switched data communication system.

Said management unit comprises a database for storing personalised information associated with a viewer of the television program, and a processor adapted to process data associated with the television program. The system comprises further a portable user device adapted to be operable by the viewer while viewing the television program. The portable user device comprises a communication module enabling data communication over a wireless interface between the portable user device and the packet data communication system. The portable user device and the management unit are adapted to communicate data that associates with the television program over said wireless interface and packet data communication system at the same time when the television program is presented to the viewer based on the program signal provided through the program signal provision system.

According to yet another aspect of the present invention there is provided a portable user device operable by a viewer of a television program while viewing the program presented by a television terminal adapted to receive a television signal from a television system. The user device comprises a communication module enabling data communication over a wireless interface between the portable user device and a packet data communication system, said packet data

communication system being an independent system from the television system. The user device comprises also a controller that is adapted to process data received from or to be transported to a remote management unit that is connected to the packet data communication system. The portable user device is adapted to communicate data that associates with the television program and has been personalised based on the personal characteristics of the viewer over said wireless interface at the same time when the television program is presented to the viewer.

According to more specific embodiment of the invention, the data transportation may originate from the remote unit. Information that associates with the program may also be stored in the remote unit. Data may also or alternatively be transported from the user device. A broadcasting system or apparatus for replaying recorded programs may provide the representation device with the program signal. The user device may comprise a portable or handheld controller. Wireless communication may be arranged between the controller and other apparatus of the system.

The packet data communication network is preferably based on one of the third generation telecommunication standards. The wireless link may comprise a short range radio link. The wireless link may operate in an unlicensed radio frequency band. The wireless link may employ frequency hopping, wherein the frequency may be changed between subsequent data packets.

The data transported over the wireless link may comprise control instructions for the user device, additional information that associates with the program, and/or further content that associates with the program. The data

transportation between the user device and the remote management unit may provide interaction between a viewer of a television program and the television system.

- 5 The program may include at least one event to which the user may react, e.g. by inputting a response into the user device. The user device may present an audio message and/or a visual message based on data transported from the remote unit. Voice messages may be transported based on the voice over internet protocol (VOIP). The data transportation may be triggered by a
- 10 predefined event in the program or based on monitoring of a time-code that associates with the recording media used for storing the program. The user may also trigger the data transportation by inputting a speech message into the
- 15 controller or by pressing an appropriate key or keys. At least one element of the user device may be operated based on data received from the remote management unit.

- 20 Data to be transported to the user device is preferably personalised before transportation based on the information stored in a database of the remote management unit. The user may be enabled to modify the information stored in the database.

- 25 The embodiments of the invention may provide a cost effective way for enabling e.g. the viewer of a TV programme to interact with it and/or to receive further content and associated information that associates with the program. No apparatus may be required to be provided at the premises where the program
- 30 is experienced for the provision of linking and or synchronisation between the program and the preferably two-way communication by the user. The embodiments may thus enable an easy and/or affordable interaction with a program. The

embodiments may be used in any home today with the existing television or radio receiver sets. The embodiments may enable provision of selective and/or tailored data to the users. The tailoring can be based on personal characteristics of individual users of the system. The embodiments may make programs that are based on interactive learning and/or children programs and/or gaming programs and the like more interesting for the viewers. The embodiment may also enable more feasible and affordable real-time communication between the users and the program service providers than in the conventional solutions.

Brief Description of the Drawings

For better understanding of the present invention, reference will now be made by way of example to the accompanying drawings in which:

Figure 1 shows one embodiment of the present invention;

Figure 2 is a flowchart illustrating an embodiment of the present invention;

Figure 3 shows further embodiments of the present invention; and

Figure 4 shows an embodiment wherein data is communicated via a cellular network.

Description of the Preferred Embodiments of the Invention

Reference is made to Figure 1 which shows an embodiment of the present invention that relates to presentation of TV programs that are transmitted by means of a public television broadcast network 25. The television network 25 can be of any type, such as a conventional analogue network or a digital television network. The network 25 includes a wireless transmitter or

antenna 2 for transmitting the television signal towards television apparatus 1. It should be appreciated that instead of distributing the television signal through antennae, the signal may be distributed through other media, such as cable or satellite subscriptions (not shown). It should also be appreciated that although only one antenna and TV set is shown for clarity reasons, the number of the antennae and TV sets connected to the TV network is typically much higher.

10 The television network system is also provided with a broadcasting apparatus 3 for the provision of the TV program signal to the antennae. It should be understood that the broadcasting apparatus typically includes various different elements in the TV studio and elsewhere in the television system. The apparatus that is required for the provision of the television program signal to the antenna 2 and the operation thereof is known and does not form a part of the invention as such, and will thus not be described in more detail.

20 The Figure 1 system includes further a data processing entity or management unit 4 comprising a processor facility 5 and storage means or database 7. The database 7 is provided for storing information on the individual users 14 of the system. That is, each of the users of the system may be individually registered onto the management unit 4 so that a personalised experience may be tailored for each user based on the information stored in the database. The information stored in the database 7 may be used e.g. to personalise communication towards individual users. For example, it is possible to personalise additional content that associates with a particular program, e.g. such that different viewers with different interests will receive different additional content.

In the simplest form the user related information may comprise indication that the user is allowed to fetch data from and/or transmit data to the management unit 4. The database 7 or a
 5 separate database is also preferably used for storing information that associates with the programs, such as additional content or background information. The management unit or 'hub' 4 may communicate via a connection 17 with one or several elements of the television system 25, although this
 10 is not a necessity in all embodiments.

The management unit 4 is connected to appropriate gateway apparatus 8 for enabling communication via a packet data communication network 6. For example, the management unit 4
 15 may be provided with voice over IP (Internet Protocol) gateway apparatus for enabling voice communication via a packet switched Internet protocol (IP) based data network. The skilled person is familiar with various possible gateway arrangements for connecting a data processing entity to a data
 20 network, and therefore they are not discussed in more detail.

The management unit 4 may be operated and run by an independent service provider providing interactivity and/or other content services. The management unit 4 may
 25 alternatively be controlled by the TV company itself. The presenter of a program and/or the production team of a TV program may also have a connection to the management unit 4 so that they may communicate with the viewers through the interaction system and/or control the communication between
 30 the viewer i.e. the user 14 and the management unit 4, as will be explained later.

The data communications network 6 may comprise any network that is capable of providing data transportation services for the management unit 4. The communication system provides preferably broadband communication services for the

5 subscribers thereof. The broadband services is preferably provided to home users through a data communication system that is based e.g. on one of the third generation (3G) telecommunications standards. Examples of the 3G standards will be discussed in more detail later with reference to
10 Figure 4. The packet data network may also be based on technologies such as an integrated services digital network (ISDN) or an asynchronous data subscriber line (ADSL). A data communication system includes typically various elements, such as one or more network controllers, exchanges and/or routers
15 (not shown for clarity reasons) and one or more gateways 8.

A home base station 9 is shown to be connected to the data communication network 6, and thus also to the management unit 4. The connection between the management unit 4 and the base
20 station 9 may be based on any appropriate data transport protocol, such as the Internet Protocol (IP). The base station 9 is adapted to interface the data network 6 and one or several user devices in the location of the base station 9. The location can be e.g. a house, a suburban housing area or a
25 block of flats.

The user 14 is provided with a portable user device. The user device may comprise a portable i.e. handheld on-site controller 10 that the user 14 may see and operate while
30 watching the TV apparatus 1. The controller 10 provides an interactive remote station that may communicate over a wireless interface 13 with the base station 9. To enable this, the controller 10 of Figure 1 is provided with a radio

communication module 12 that is enabled to have a wireless high speed data connection with the base station 9. Thus the data network 6 and the base station 9 are enabled to provide broadband communication between the management unit 4 and the portable controller 10.

In case a public data communication network that provides wireless services for the user thereof is used, the user device 10 may communicate directly with a base station of the data network. This embodiment will be described in more detail with reference to Figure 4. Alternatively, the wireless link 13 between the controller 10 and the base station 9 may be based on a communication protocol that is capable of providing a local low power wireless service. The low power wireless service may be different from the standard and protocols of the data network 6. The low power wireless link may be provided by a short range radio link (SRRL) between any two or more stations that are close enough to each other. The short range low power wireless services operate typically in a unlicensed frequency range, such as in frequencies over 2 GHz. For example, in the USA unlicensed ISM bands 2.4 to 2.5. GHz and 5.725 to 5.875 GHz are permitted.

The controller 10 and the base station 9 are provided with appropriate wireless communication modules 12 and 19, respectively such that duplex traffic between the two stations is enabled. The wireless modules 12 and 19 are preferably based on standardised low power radio service components. It should be appreciated that although this description describes a base station comprising a wireless module, the base station 9 may in its simple form constitute of a wireless transmitter and/or receiver and means for interfacing the transmitter and/or receiver to the data network 6.

An appropriate low power wireless service that may be used in the embodiments is based on a so called Bluetooth™ protocol. The term Bluetooth™ refers to a technology specification by the Bluetooth special interest group (SIG) for small factor, low-cost, short range radio links (SRRL) between various devices, such as mobile stations, portable personal computers, and other portable devices. Bluetooth™ facilitates real-time voice and data transmissions. If the controller 10 is equipped with a Bluetooth™ wireless module 12, a connection may be established between the controller and the base station 9 that is also provided with a Bluetooth™ wireless module 19. The Bluetooth™ technology allows for a replacement of any cables that conventionally have connected devices to each other with a universal short range radio link. The wireless Bluetooth™ modules operate in an unlicensed ISM band at 2.4 GHz that is globally available. The connection may be established and maintained even when the controller 10 and the base station 9 are not within line of sight, e.g. are located in different rooms. The short range link may cover a radio service area of, for example, about 10 meters, but the range can also be extended to around 100 meters, e.g. by means of an amplifier.

The Bluetooth™ basement protocol is a combination of circuit and packet switching. Slots can be reserved for synchronised data packets. A data packet nominally covers a single slot, but can be extended to cover up to five slots, or even more. The Bluetooth™ specification defines a fast acknowledgement and frequency hopping scheme to improve the robustness of the wireless link and to combat interference and fading. Bluetooth™ wireless modules are adapted to avoid interference from other signals by hopping to a new frequency after transmitting or receiving a data packet. The use of short data

packets and fast hopping may also limit the impact of other devices such as microwave ovens or other receivers and/or transmitters. A shaped, binary FM modulation is applied to minimise the complexity of the transceiver of the wireless module.

The Bluetooth™ radio service can support an asynchronous data channel, up to three simultaneous synchronised voice channels or a channel which simultaneously supports asynchronous data and synchronised voice. The gross data rate of the present Bluetooth™ applications is 1MB per second. Each voice channel may support a 64 kb/s synchronous link. At present the asynchronous channel can support an asymmetric link of 721 kb/s in either direction while permitting 57.6 kb/s in the return direction, or a 432.6 kb/s symmetric link. A time division duplex scheme may be used for full duplex transmission. The network topology of the Bluetooth™ system may support both point-to-point and point-to-multipoint connections, thereby enabling communication between several devices at the same time.

The size of the Bluetooth™ wireless module is relatively small and typically comprises a single chip. A Bluetooth™ chip may comprise all necessary processors, radio part, interface means and so on. Since the chip is a standardised element, the implementation costs of the wireless controller may be relatively low. The power consumption of a typical Bluetooth™ arrangement is also low. The fast frequency hopping scheme enables robust radio links between the controller and the base station.

The controller may be provided with voice input/output means and/or various trigger sensors in the body thereof. A

graphics display 11 and selection buttons 15 may also be provided in the controller. The display 11 may be adapted to show still images or video images that are based on signals received via the wireless transmission from the base station

5 9. The display 11 may also comprise a so called touch screen function. The controller 10 may be IP enabled. The controller 10 may have a customised application loaded into it.

With reference now also to Figure 2, operation of an

10 embodiment of the present invention is explained in more detail. The TV programme production company may create a program which make use of the interactive controller 10. The programme may be a recorded or live program and transmitted in a conventional fashion. The generation of messages to be

15 communicated between the controller 10 and the management unit 4 may associate with predetermined events in the production. According to a preferred embodiment a time-code of the film constitutes an event that triggers signalling from the management unit 4 towards the controller 10. The progression

20 of the program can be followed and/or the time-code detected by the element 3 of the broadcasting system 25. The element 3 may be used to generate and transmit a request for the management unit 4 over the connection 17 to transmit data towards the controller 10. According to a possibility the

25 element 3 or the management unit 4 monitors for a predefined event, e.g. a predefined sound effect or visual effect in the program, and upon detection thereof initiates the data transmission. The sound effect detection or visual effect detection may be based on digital sound or image processing

30 techniques. The triggering of the messaging may also be based on combination of several events, e.g. such that a time-code condition and a visual effect has to be met before any message is generated and/or transmitted or that it is enough that one

event of several possible events is detected. The transmission of data from the management unit 4 may also be initiated upon receiving a request from the controller 10. The data that may be sent to the controller 10 may take, for example, the form of voice data, video data and control instruction data.

The user 14 may receive personalised content from the management unit 4 and may thus be provided with an enhanced and tailored television viewing experience. Each user may be personalised in the management unit or service provider portal based on information stored in the database 7 thereof. The personalised information may be obtained e.g. when a controller is purchased. The buyer may complete a registration form identifying the owner of the controller or the users of the controller (e.g. all members of a family). In this way, the controller and/or interaction can be personalised to each individual. One or more of the following criteria may be used as part of the personalisation process: first name; last name; date and/or place of birth; sex; colour of eyes; colour of hair; personal interests/preferences; hobbies; nationality; preferred language; and so on. Even detailed health information, such as eyesight or information regarding difficulties in hearing, can be stored in the database, as this may be used e.g. when providing programs to special groups.

The personal information can also be submitted e.g. by post, Internet, (e.g. through Hyper Text Mark-up Language HTML pages), telephone or personal visit to the provider of the interactive services or by any other appropriate way. This information will be stored in the database 7 and the controller is personalised to each viewer based on the stored information. The stored data may be used when predefined

events in the program or a request by the controller trigger the procedure for data transmission to the controller.

The triggered message and personalisation data may be combined
 5 to form a "video event" or a "Sound Event". An example of the latter is a birthday song that is presented to a person on his/hers birthday. The generated event is sent to a gateway 8 where e.g. the sound file is converted using e.g. Voice Over IP protocol and transmitted over a data network 6 to the
 10 controller 10.

The user 14 may activate the controller 10 whilst watching a program. The user may input various information, such as his/hers identity, information regarding the channel he/she is
 15 watching and so on. This information may also be provided by the receiver apparatus, either via a connection with the controller 10 or base station 9. To enable the communication with the other devices in the household, the TV may be provided with a similar wireless module as the controller, or
 20 the communication may occur e.g. via a conventional infrared link. The controller may then generate and transmit a message to the management unit, and more particularly, to the processor 5 thereof. Based on the message from the controller 10 and/or information stored in the database 7, the processor
 25 5 generates a content entity that is transported back to the controller and presented to the user 14 thereof.

According to an embodiment the controller is associated with a toy, such as a teddy bear 10 of Figure 4. It should be
 30 appreciated that in the following description any reference to Teddy 10 is also a reference to any portable on-site controller, whenever appropriate. When the cuddly toy, such as the teddy bear 10, is not used as an interface towards the TV

system, it can be played with in a normal manner. When a particular broadcast starts, the child may activate the toy e.g. by squeezing the toy's nose or by touching or pressing other predefined parts or activation means of the toy. The toy is activated, i.e. 'comes to life', and as the broadcast continues, the toy may ask questions in relation to the broadcast. The child may interact with the program by sending responses through the Teddy (e.g. by pressing one or several of the buttons thereof, by touching an element of the toy given to him/her by the program or simply by speaking to the toy). The answers may be verified by the management unit 4, and feedback may be given to the child regarding the correctness of the answers.

Sound messages may be output by one or more speakers built into the Teddy (for example, in the mouth of the teddy bear). The sound message may be based on the signal fed by the VoIP conversion. A microphone may also be built into the Teddy (e.g. in one or both ears 16) allowing the child to talk back.

The input may again be encoded using VoIP and transmitted back to the control system 4, where a speech recognition software could interpret what has been said. The control system 4 may then generate an appropriate response.

In accordance with a further embodiment the design of the controller 10 is such that mechanical movement of at least some parts thereof are enabled. This may affect the amount of battery power required, but would also add to the over-all design. For example, if the controller is in a form of a toy, e.g. the Teddy, movement of the mouth, eyes, head, limbs and ears of the toy are all possible. The movement may be controlled by the management unit 4 via the data network. For example, the movements of the various elements of the Teddy

bear may follow the story of the program, or give feedback to the child based on the responses he/she has given to the questions. It should be appreciated that a similar control instruction mechanism may be employed to control the operation of any controller and/or the various components thereof that may be employed when implementing the embodiments of the present invention.

A further embodiment of the invention will now be described with reference to Figure 3. A video recorder 20 is shown to comprise a wireless module 21 that is capable to communicate with a base station 9, preferably via a Bluetooth™ wireless link. The video recorder or similar program replaying apparatus is adapted to detect a time code or any other indication in the recorded program. The detection of the indication triggers signalling from the video recorder (VCR) towards the base station 9, and further to a management unit 4 via a data network 6. In response the management unit 4 may generate and transmit predefined content to be presented to the user of the recorder. The embodiment enables interactive viewing of recorded programs, the difference to Figure 1 embodiment being that the triggering event may originate from the video recorder 20 that is typically at the location of the viewer 14 rather than from the broadcasting system 25.

The video recorder 20 may include in the transmission information that identifies the program and/or the user and so on. The presentation of the content to the user may occur either by means of the video recorder 20 (that is typically connected to a TV apparatus) or by a controller unit 10. The controller 10 may be similar to the ones described in connection with Figures 1 and 2.

It should be appreciated that the replaying device 20 may be any device capable of presenting a program on a storage media, such as on a video tape, digital video disk (DVD), on computer disk and so on and that the program to be shown via the TV
 5 screen does not necessarily need to be broadcast via a broadcasting system.

According to a further embodiment, the video recorder 20 or the TV apparatus and the controller 10 may communicate with
 10 each other over a wireless link 23 or via the base station 9. In the latter case the base station acts as an interfacing element between the various devices, such as 10 and 20 connected thereto.

15 According to an embodiment, the video recorder 20 or the TV apparatus is provided with means for detecting a predefined event from the broadcast signal. The means may comprise e.g. a dongle adapted to interpret the time-code from the broadcast signal. After detection of the event, a message is sent over
 20 the short range link either to the base station 9 or the controller 10. This embodiment enables an arrangement where it is not necessary to have a communication link (such as link 17 in Figure 1) between the broadcasting system 25 and the management unit 4. This is enabled even in instances where the user is viewing a program that is not recorded and/or replayed by the recorder 20, but is only received and immediately represented by the TV apparatus. In addition, the embodiment may enable presentation of the additional content by means of the TV apparatus, e.g. via an additional window opened on the
 30 screen thereof or by replacing the picture on the screen that is based on the broadcast signal by a picture that is based on data communicated from the management unit 4.

The messaging between the video recorder 20 and the base station 9 may also "hop" via the controller 10. Before the next hop, the user of the controller 10 may confirm that data is actually to be transmitted to the remote management unit 4 or to the video recorder 20 and/or the TV apparatus.

Figure 4 shows a preferred alternative for the wireless data communication interface. In the Figure 4 embodiment the data network 6 comprises a network that is capable of providing wireless packet switched data communication services, such as a General Packet Radio Service GPRS network, EDGE (enhanced data rate for GSM evolution) Mobile Data Network or an appropriate third generation telecommunication system such as a CDMA (code division multiple access) or TDMA (time division multiple access) based 3rd generation telecommunication systems referred to as Universal Mobile Telecommunication System (UMTS). The GPRS network is described in more detail for example in 3GPP technical specification 3G TS 23.060 "General Packet Radio Service (GPRS); Service Description; Stage 2", January 2000. This document is incorporated herein by reference. A UMTS system that is based on a WCDMA (wideband code division multiple access) is described in more detail e.g. in UMTS related 3GPP technical specifications. Other suitable packet data telecommunication standards include, without limiting to these, IS-95 and International Mobile Telecommunication System 2000.

If the data communication is based on use of the public land line mobile networks (PLMN), then the base station 9 would be provided by means of a base station of the PLMN system instead of a short range radio link home base station of Figure 1. The controller 10 may be enabled to communicate directly with said PLMN base station 9. To enable this, the controller 10 may

contain e.g. a GPRS transceiver module and an appropriate data processing unit, such as a Symbian EPOC micro-processor. The EPOC platform may be used because it supports Wireless Application Technology (WAP) and may be used with a Voice Over
5 IP (VoIP) client. According to an alternative embodiment the short range radio link home base station is enabled to communicate with the base station of the PLMN systems.

Data rates up to 115kbit/s may be transmitted via the wireless
10 interface in accordance with the present GPRS specifications, although the rate may be even more in the future applications. This enables wireless transmission of information at a speed that may be used in the embodiments. The introduction of GPRS (General Packet Radio Service) is one of the key steps in the
15 evolution of today's 2nd generation networks, such as the GSM (Global System for Mobile) to third generation systems, and the first commercial GPRS services are believed to be launched in near future. Following the arrival of GPRS, a further step in the bandwidth model is believed to occur with EDGE, with
20 speeds of up to 384kbit/s being possible. The bandwidth potential of the 3rd generation systems such as the UMTS or IMT 2000 (International Mobile Telecommunication System 2000) or IS-95 is in the first phase believed to be up to 2Mbit/s, and even more in the future. The inventor has found that the
25 wireless packet switched services will enable the embodiments of the invention due to their capability of providing wireless high speed data connection that was not facilitated by the conventional circuit switched wireless connections.

30 An advantage of the packet switched services when compared to the conventional data services is that the packet switched service will always be available. The packet switched service are thus also referred to as connectionless services, as there

will not be any communication circuits. Instead, each of the data packets is provided with an address and the individual packet are routed to the destination based on the address information. This means that the users are always connected
 5 and always on-line, and thus the management unit 4 will be easy and quick to access. Another benefit is that the user of the packet switched services may pay only for the content used and not the length of time connected. This enables a seamless access to a whole range of new and existing Internet Protocol
 10 (IP) based services. The viewers will be able to stay permanently logged-on to the interactive services and to send data to and to receive data the management unit with large file attachments in an instant. Since the viewers may be always connected and always on-line, the interactive services
 15 will be easy and quick to access and, with the capability to charge per data bit sent and received, customers will be able to pay only for the usage of the data transmission resources, e.g. per a data packet transmitted.

20 According to an embodiment, wireless application protocol (WAP) technology may be employed for the wireless transmission. For example, the display and selection buttons built into the controller 10 may also be based on the use of the wireless application protocol (WAP).

25 The user may also be able to customise the interactive service based e.g. on an HTML interface and a PC. In addition to receiving content and/or interacting with the programs, the user may also use the controller to other purposes, such as
 30 for ordering e.g. video-on-demand type services or goods/services offered by the broadcast program.

According to a further embodiment, the management unit 4 may be used for selective marketing towards the users of the system. For example, the unit 4 may trigger commercial or other content to be transported to a selected user based on the information of the user and also of the program he/she is currently viewing. A user who has registered as a fan of football club A would receive different information than user who is registered as a club B fan, and son.

- 10 According to a further embodiment, instead of being rather an entertainer or an information provider, the user device may be used as a companion or security device for the user thereof. The user device 10 may be adapted to be used as a reminder device under the control of the management unit 4. It may also
15 comprise a "panic button" type function, which may be used e.g. by the elderly to get help. The panic button function may be activated by pressing a key or by a voice prompt.

- It should be appreciated that whilst embodiments of the
20 present invention have been described in relation to some specific types of programs and user equipment, embodiments of the present invention are applicable to any other suitable type of control equipment and programmes. For example, the programs may ask the viewers to express their opinion or give
25 their vote in issues raised by the program.

- It is also noted herein that while the above describes exemplifying embodiments of the invention, there are several variations and modifications which may be made to the
30 disclosed solution without departing from the scope of the present invention as defined in the appended claims.

Claims

1. A method for presenting a program for a user, comprising:
storing information that associates with the user in a
5 remote management unit;
providing a program representation device with a program
signal by means of a program signal broadcasting system;
presenting the program to the user based on the program
signal; and
10 in response to a predefined event, transporting data
between the remote management unit and a user device operable
by the user while experiencing the program, the transportation
occurring over a packet data network and a wireless data
communication link between the packet data network and the
15 user device, and said data associating with the program and
being personalised based on said stored information.
2. A method as claimed in claim 1, wherein data is
transported from the remote management unit.
- 20 3. A method as claimed in claim 1, wherein data is
transported from the user device.
4. A method as claimed in claim 1, wherein the user device
25 comprises a portable controller.
5. A method as claimed in claim 1, wherein the user device
processes data packets received from or to be transported to
the management unit.
- 30 6. A method as claimed in claim 1, comprising a further step
of storing data that associates with the program in the remote
unit.

7. A method as claimed in claim 1, wherein a base station interfaces the wireless data communication link to the data network.

5

8. A method as claimed in claim 1, wherein the wireless link comprises a short range radio link.

9. A method as claimed in claim 1, wherein data is
10 transported over the wireless link in an unlicensed radio frequency band.

10. A method as claimed in claim 1, wherein the wireless link operates at a frequency band that is about 2.4 GHz.

15

11. A method as claimed in claim 1, comprising transportation of data packets.

12. A method as claimed in claim 1, wherein the wireless link
20 employs frequency hopping.

13. A method as claimed in claim 12, wherein the frequency used for the wireless link is changed between subsequent data packets of the packet data transmission.

25

14. A method as claimed in claim 1, wherein the wireless link is based on a universal short range radio link protocol.

15. A method as claimed in claim 14, wherein the protocol is
30 based on a protocol defined by Bluetooth™ Special Interest Group.

16. A method as claimed in claim 1, wherein the data transported over the wireless link comprises control instructions for the user device.

5 17. A method as claimed in claim 1, wherein the data transported between the management unit and the user device comprises additional information that associates with the program.

10 18. A method as claimed in claim 1, wherein the data transported between the management unit and the user device comprises further content that associates with the program.

15 19. A method as claimed in claim 1, wherein the data transportation between the user device and the remote management unit provides interaction between a viewer of a television program provided by a television system and the television system.

20 20. A method as claimed in claim 1, wherein a packet data message is generated at the user device in response to an input by the user, the generated message is subsequently transported from the user device to the remote management unit, and in response to receiving the packet data message,
25 the remote management unit generates a further packet data message to be transported to the user device.

21. A method as claimed in claim 1, wherein the program includes at least one event to which the user may react by
30 inputting a response into the user device.

22. A method as claimed in claim 1, wherein the user device presents to the user an audio message based on data transported from the remote management unit.

5 23. A method as claimed in claim 1, wherein the user device presents to the user a visual message based on data transported from the remote management unit.

10 24. A method as claimed in claim 1, wherein one or more questions or tasks are presented to the user by the user device based on data transported from the remote management unit.

15 25. A method as claimed in claim 29, wherein the user inputs response to said one or more questions or tasks, data based on the response is transported to the management unit, and the management unit generates and transmits a feedback message regarding the response to the user device.

20 26. A method as claimed in claim 1, comprising transportation of voice messages based on the voice over internet protocol (VOIP).

25 27. A method as claimed in claim 1, wherein the data transportation is triggered by a predefined event that associates with the program.

30 28. A method as claimed in claim 1, wherein the data transportation is triggered based on monitoring of a time-code that associates with recording media used for storing the program.

29. A method as claimed in claim 28, wherein an element of the broadcasting system monitors for the time-code.

5 30. A method as claimed in claim 28, wherein apparatus for replaying recorded programs monitors for the time-code.

31. A method as claimed in claim 28, wherein the user device monitors for the time-code.

10 32. A method as claimed in claim 27, wherein the event detection is based on detection of a predefined audio effect or visual effect in the program.

15 33. A method as claimed in claim 1, wherein the user triggers the data transportation by inputting a speech message into the controller, the speech message is modified for the transmission over the wireless link and the data network, and the speech message is recognised in the remote management unit.

20 34. A method as claimed in claim 1, wherein at least one element of the user device is operated based on data received from the remote management unit.

25 35. A method as claimed in claim 34, wherein the at least one element is moved based on control instructions in the data message generated by the remote management unit.

30 36. A method as claimed in claim 1, wherein the data network provides broadband data transportation services for the users thereof.

37. A method as claimed in claim 1, wherein the data network is based on one of the third generation mobile telecommunication network standards.

5 38. A method as claimed in claim 1, wherein the data network is based on at least one technology that is selected from the following possibilities: an Asynchronous Data Subscriber Line; an Integrated Services Digital Network; a General Packet Radio Service; Enhanced Data Rate for GSM Evolution; a Universal
10 Mobile Telecommunication Service, IS-95; International Mobile Telecommunication System 2000.

39. A method as claimed in claims 1, wherein data to be transported to the user device is personalised before
15 transportation based on the information stored in a database of the remote management unit.

40. A method as claimed in claim 1, wherein the user is enabled to modify said information stored in the database.
20

41. A method as claimed in claim 1, wherein data is routed to the user device based on said information stored in the database.

25 42. A method as claimed in claim 1, wherein the information of the user stored in the management unit comprises information regarding at least one of the following personal characteristic: first name; last name; date of birth; place of birth; sex; colour of eyes; colour of hair; personal
30 interests/preferences; hobbies; nationality; preferred language; health.

43. A method as claimed in claim 1, wherein the user device associates with a toy.

44. A method as claimed in claim 43, wherein the toy is a
5 cuddly toy, a dolly or the like.

45. A method as claimed in claim 1, wherein the program is one of the following selection: an educational program; a game show, a documentary; a news program; a sports program; an
10 entertainment program; a comedy; a drama; a movie; a children program.

46. A method for presenting a program for a user, comprising:
storing information that associates with the user in a
15 remote management unit;
generating a program signal by means of replaying apparatus;
providing a program representation device with the program signal;
20 presenting the program to the user based on the program signal; and
in response to a predefined event, transporting data between the remote management unit and a user device operable by the user while experiencing the program, the transportation
25 occurring over a packet data network and a wireless data communication link between the packet data network and the user device, and said data associating with the program and being personalised based on said stored information.

30 47. A method as claimed in claim 46, wherein the user is provided with interaction with a program stored in a recording medium at any time the user desires to experience the recorded program.

48. A method as claimed in claim 46, wherein the user is provided with additional data associated with a program stored in a recording medium at any time the user desires to
5 experience the recorded program.

49. A method as claimed in claim 46, comprising further steps of broadcasting the program and recording the program by the replaying apparatus prior provision of the signal to the
10 representation device.

50. A method as claimed in claim 46, wherein the occurrence of the predefined event is monitored by the user device.

51. A method as claimed in claim 46, wherein, in response to detection of the event, the user device transports a packet data message to the remote management unit.
15

52. A method as claimed in claim 46, wherein the occurrence of the predefined event is monitored by the replaying apparatus.
20

53. A method as claimed in claim 52, wherein, in response to detection of the event, the replaying apparatus transmits a notification to the user device.
25

54. A method as claimed in claim 46, further comprising wireless communication between the user device and the replaying apparatus.

55. A method as claimed in claim 46, wherein data is transmitted in hops between said apparatus for replaying recorded programs, the user device and the data network.
30

56. A method for providing interactivity for a viewer of a television program provided by a television system, comprising:

displaying the television program to the viewer based on a
5 signal from the television system;

generating a packet data message that is to be transmitted between a remote management unit and a handheld controller operable by the viewer while viewing the program, wherein the management unit is connected to a packet switched data
10 communication system and comprises processor means for processing and storage means for storing information that associates with the viewer and also information that associates with the program, and wherein the handheld controller is associated with a wireless module enabling a
15 wireless data communication link between the controller and the packet switched communication network; and

transmitting the packet data message between the wireless module and the packet switched telecommunication system via the wireless data communication link, wherein the packed data
20 message and the signal from the television system are transported is separate communication systems.

57. A system for presenting a program, comprising:

a program representation terminal for representing the
25 program to a user;

a broadcasting system for providing the program to the program representation terminal;

a packet data communication network;

a remote management unit that is connected to the packet
30 data communication network, said remote management unit comprising a processor for processing data that associates with the program and a storage unit for storing information that associates with the user, said processor being adapted to

personalise data that associates with the program based on the information that associates with the user; and

5 a user device operable by the user while experiencing the program, the user device being adapted for communication over the packet data network by means of a wireless data communication link between the data communication network and the user device and to present information to the user based on data that is received via the wireless data communication link from the remote management unit while the user is
10 experiencing the program.

58. A system as claimed in claim 57, wherein the user device comprises a portable controller that is provided with means for presenting to the user an audio message based on data
15 received from the management unit.

59. A system as claimed in claim 57, wherein the user device comprises a portable controller that is provided with means for presenting to the user a visual message based on data
20 received from the management unit.

60. A system as claimed in claim 57, comprising a base station for interfacing the wireless data communication link with the packet data network.
25

61. A system as claimed in claim 57, wherein the wireless data communication link comprises a short range radio link.

62. A system as claimed in claim 57, wherein the wireless data communication link operates at a frequency band that is about
30 2.4 GHz.

63. A system as claimed in claim 57, wherein the wireless link is adapted to employ frequency hopping.

5 64. A system as claimed in claim 63, wherein the frequency of the wireless link is adapted to be changed between subsequent data packets.

10 65. A system as claimed in claim 56, wherein the wireless link is based on a protocol defined by Bluetooth™ Special Interest Group.

15 66. A system as claimed in claim 56, wherein the data transportation between the user device and the remote management unit provides interaction between a viewer of a television program provided by the broadcasting system and the television program.

20 67. A system as claimed in claim 56, comprising monitoring means for monitoring for a predefined event.

25 68. A system as claimed in claim 64, wherein the system is adapted to transport data between the management unit and the user device in response to detection of the predefined event by the monitoring means.

69. A system as claimed in claim 56, wherein the predefined event is detected based on a time-code associated with the program.

30 70. A system as claimed in claim 56, wherein the broadcasting system distributes the program signals to a plurality of representation terminals, the arrangement being such that each individual user of the plurality of terminals may receive data

that has been personalised based on individual characteristic information stored in the remote management unit.

71. A system as claimed in claim 56, wherein the packet data
5 communication network is based on one of the third generation mobile telecommunication network standards.

72. A system as claimed in claim 56, wherein the technology
for the packet data communication network is selected from the
10 following list of packet data communication systems: an Asynchronous Data Subscriber Line; an Integrated Services Digital Network; a General Packet Radio Service; Enhanced Data Rate for GSM Evolution; a Universal Mobile Telecommunication Service, IS-95; International Mobile Telecommunication System
15 2000.

73. A system as claimed in claim 56, wherein the user device comprises speech recognition means.

20 74. A system as claimed in claim 56, wherein the user device comprises at least one element that is controllable based on data received from the remote management unit.

75. A system as claimed in claim 56, wherein the at least
25 one element is moved based on control instructions in the data message generated by the remote management unit.

76. A system for presenting a program, comprising:
a program representation terminal for representing the
30 program to a user;
program replaying apparatus for providing the program to the program representation terminal;
a packet data communication network;

a remote management unit that is connected to the packet data communication network, said remote management unit comprising a processor for processing data that associates with the program and a storage unit for storing information that associates with the user, said processor being adapted to personalise data that associates with the program based on the information that associates with the user; and

a user device operable by the user while experiencing the program, the user device being adapted for communication over the packet data network by means of a wireless data communication link between the data communication network and the user device and to present information to the user based on data that is received via the wireless data communication link from the remote management unit while the user is experiencing the program.

77. A system for presenting television programs, comprising:
a television terminal for displaying the television program based on a program signal;

a program signal provision system adapted to provide the television terminal with the program signal;

a packet data communication system;

a management unit connected to the packet switched data communication system, said management unit comprising

a database for storing personalised information associated with a viewer of the television program, and

a processor adapted to process data associated with the television program; and

a portable user device adapted to be operable by the viewer while viewing the television program, the portable user device comprising a communication module enabling data communication over a wireless interface between the portable user device and the packet data communication system,

whereby the portable user device and the management unit are adapted to communicate data that associates with the television program over said wireless interface and packet data communication system at the same time when the television program is presented to the viewer based on the program signal provided through the program signal provision system.

78. A system as claimed in claim 77, wherein the management unit and the portable user device are adapted to provide the viewer with a possibility to interact with the television program.

79. A system as claimed in claim 77, wherein the management unit and the portable user device are adapted to provide the viewer with further content that associates with the television program.

80. A system as claimed in claim 77, wherein the data communication is adapted to be triggered by a predefined event associated with the television program

81. A system as claimed in claim 80, wherein the predefined event comprises a time-code.

82. A system as claimed in claim 77, wherein the management unit is located in a remote location from the television terminal and the television signal provision system.

83. A system as claimed in claim 77, wherein the communicated data comprises an audio message.

84. A portable user device operable by a viewer of a television program while viewing the program presented by a

television terminal adapted to receive a television signal from a television system, comprising:

a communication module enabling data communication over a wireless interface between the portable user device and a packet data communication system, said packet data communication system being an independent system from the television system; and

a controller adapted to process data received from or to be transported to a remote management unit that is connected to the packet data communication system;

whereby the portable user device is adapted communicate data that associates with the television program and has been personalised based on the personal characteristics of the viewer over said wireless interface at the same time when the television program is presented to the viewer.

85. A portable user device as claimed in claim 84, comprising audio means for representing audio messages.

86. A portable user device as claimed in claim 84, comprising display means for representing visual messages.

87. A portable user device as claimed in claim 84, comprising input means for receiving a user input.

88. A portable user device as claimed in claim 84, comprising speech recognition means for receiving a user input.

Presenting programs

Abstract of the disclosure

5

The invention relates to provision of improved services in connection with presenting a program for a user. Information of the user is stored in a remote management unit, preferably in a database thereof. A broadcasting system provides a terminal with a program signal and the program is presented to the user. Upon detection of a predefined event data is transported between the remote management unit and a user device that is operable by the user while he/she is experiencing the program. The transportation occurs over a packet data network and a wireless data communication link arranged between the packet data network and the user device. The data that associates with the program is personalised based on said stored information.

20

PUBLIC BROADCAST NETWORK

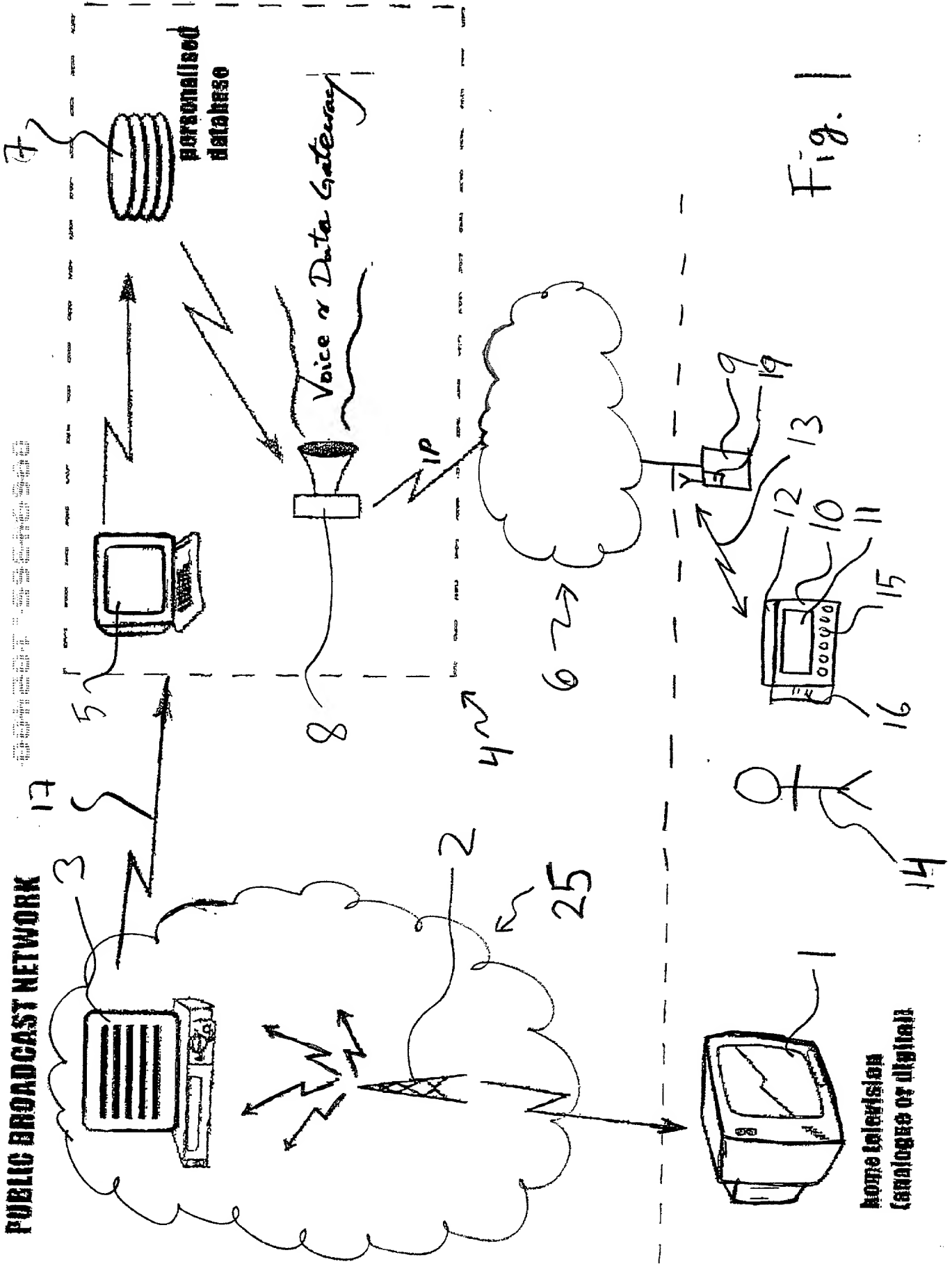


Fig. 1

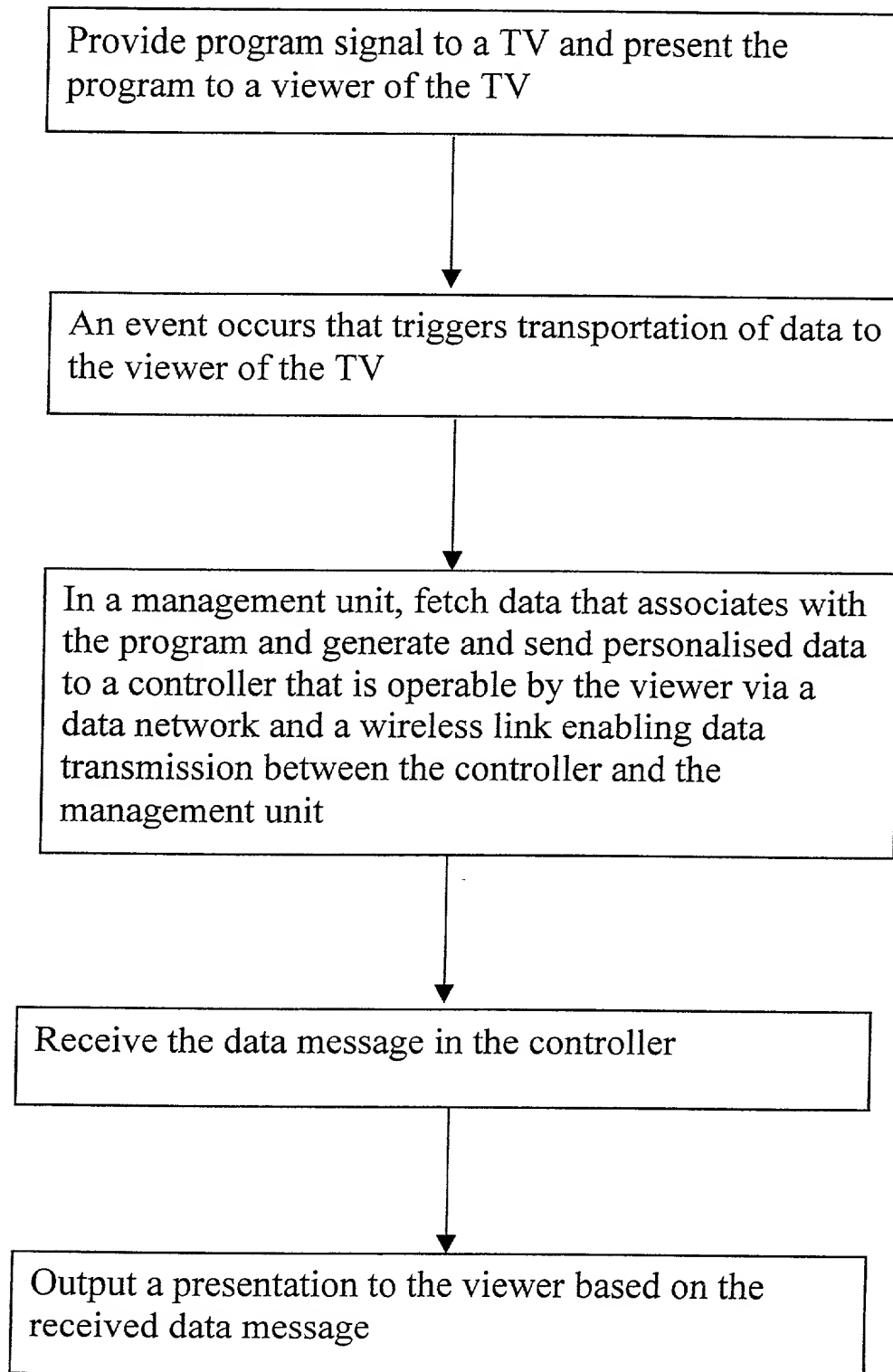
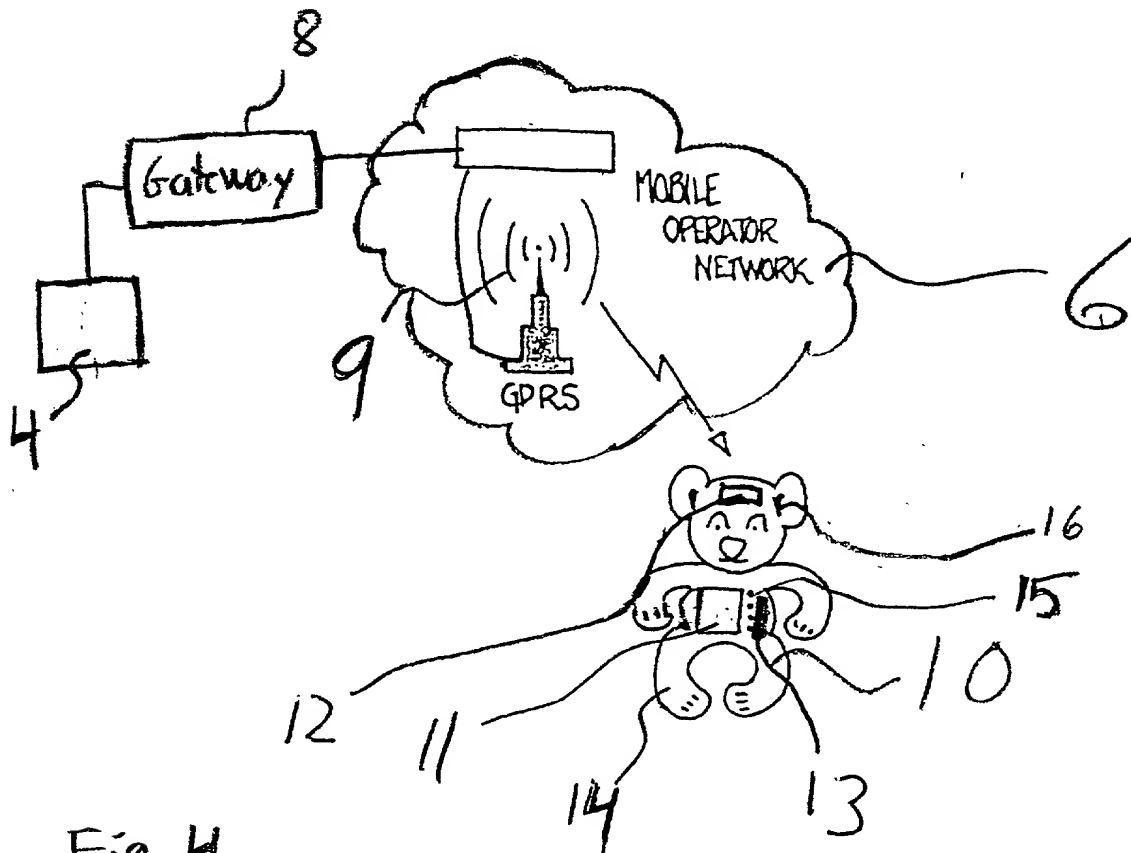
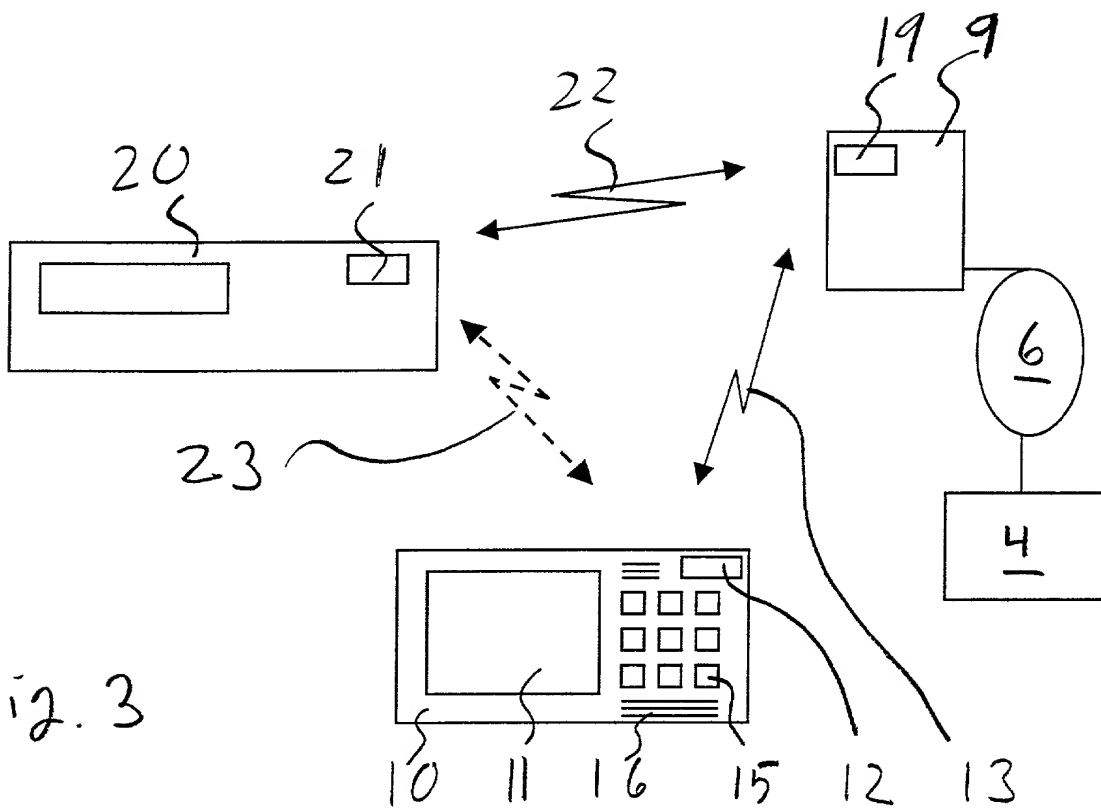


Fig. 2



Docket No. _____

ARENT FOX KINTNER PLOTKIN & KAHN, PLLC

Nikaido, Marmelstein, Murray & Oram Intellectual Property Group

Declaration For U.S. Patent Application

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled (Insert Title) Presenting programs

the specification of which is attached hereto unless the following box is checked:

☐ was filed on _____ as PCT International Application
Number _____ and was amended on _____

and/or was filed on _____ as United States Application
Number _____ and was amended on _____

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claim(s), as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 C.F.R. §1.56.

I hereby claim foreign priority benefits under 35 U.S.C. §119(a)-(d) or §365(b) of any foreign application(s) for patent or inventor's certificate, or §365(a) of any PCT International application which designated at least one country other than the United States, listed below and have also identified below any foreign application for patent or inventor's certificate or PCT International Application having a filing date before that of the application(s) for which priority is claimed:

(List prior foreign applications. See note A on back of this page)	(Number)	(Country)	(Day/Month/Year Filed)	Priority Claimed
	0005018.7	GB	1 March 2000	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
	0014320.6	GB	12 June 2000	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
	(Number)	(Country)	(Day/Month/Year Filed)	<input type="checkbox"/> Yes <input type="checkbox"/> No
	(Number)	(Country)	(Day/Month/Year Filed)	<input type="checkbox"/> Yes <input type="checkbox"/> No

I hereby claim the benefit under 35 U.S.C. §119(e) of any United States provisional application(s) listed below.

(Application Number) _____ (Filing Date) _____

(Application Number) _____ (Filing Date) _____

(See Note B on back of this page)

☐ See attached list for additional prior foreign or provisional applications.

I hereby claim the benefit under 35 U.S.C. §120 of any United States application(s) or §365(c) of any PCT International application(s) designating the United States of America listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior application(s) (U.S. or PCT) in the manner provided by the first paragraph of 35, U.S.C. §112, I acknowledge the duty to disclose information which is material to patentability as defined in 37 C.F.R. §1.56 which became available between the filing date of the prior application and the national or PCT International filing date of this application.

(List prior U.S. Applications or PCT International applications designating the U.S.)	(Application Serial No.)	(Filing Date)	(Status) (patented, pending, abandoned)
	(Application Serial No.)	(Filing Date)	(Status) (patented, pending, abandoned)

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I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further, that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

(See Note C on back of this page)

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